



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/817,061

04/02/2004

Jin-Yub Lee

4591-365

2659

20575

7590

08/23/2006

MARGER JOHNSON & MCCOLLOM, P.C.
210 SW MORRISON STREET, SUITE 400
PORTLAND, OR 97204

EXAMINER

SCHLIE, PAUL W

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/817,061		LEE, JIN-YUB	
	Examiner		Art Unit	
	Paul W. Schlie		2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/18/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-26 have been examined as amended, with 20-26 being new.

Priority

2. Applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) is acknowledged.

Response to Arguments

3. Applicant's arguments filed 7/18/06 have been fully considered but they are either not persuasive or moot in view of their rejection as necessitated by amendment.

With respect to claims 1-19 and 26, as the data register as taught by Conley is interpreted to comprise distinct read/sensing and write/programming path elements (as both considered to be implicit within the context of it's specification, and as traditionally understood may be the case by those of ordinary skill in the art); Conley is considered to teach that a data register's read/sense input path may retain read source page data itself forwarded to an error detection/correction circuit as understood may utilize conventional error correcting block codes to produce corrected data itself forwarded to said data register's write/program output path to enable error corrected page data to be written to a destination page; as correspondingly claimed.

With respect to claims 20-25, although it is acknowledged that the cited art of record does not teach all the specific elements related to the formulation of parity error check/correct codes as cited within these claims, as the applicant fails to teach how to utilize said formulated error check/correct codes to correct detected errors and which is considered critical and presumably not obvious to one of ordinary skill in the art under

Art Unit: 2186

the premise that said codes are themselves argued to be non-obvious; the disclosure is not considered enabling and rejected under U.S.C 112 first below.

Claim Rejections - 35 USC § 112

4. Claims 20-25 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure that is not enabling. As elements critical or essential to the practice of the invention, are not included in the claims nor enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Specifically, as the details by which the disclosed and claimed formulation of parity error correcting codes may be utilized to correct errors is not correspondingly disclosed, and presumed to be argued to be correspondingly non-obvious to one of ordinary skill in the art; all such claims are correspondingly not considered enabled.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 6, 11 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Conley et al. (6,266,273).

As per independent claims 1, 6, 11 and 14, Conley et al. teaches a non-volatile memory and correspondingly method comprising the means to enable the autonomous copying of a page/sector of data stored in a memory array from a first storage location to a second storage location via an intermediate local temporary data page/sector

Art Unit: 2186

buffer/register from which the validity of said data is first determined and then potentially corrected utilizing an ECC means based upon correspondingly previously computed and stored parity associated with said data, such that the data stored at said second location has been verified as being free of any correctable errors present prior to said copying. Thereby all claimed limitations are considered to be fully explicitly or inherently taught. (See column 1 lines 32-41, column 3 lines 16-24, column 4 lines 3-16, and figures 5-6.)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-5, 7-10, 12-13, 15-19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conley et al. (6,266,273).

As per claims 2-5, 7-10, 12-13, 15-19 and 26 being dependent on claims 1, 6, 11, 14, or correspondingly dependent claim inclusively, as NAND architecture based flash memories were commonly understood by those of ordinary skill in the art, and in view that although Conley et al. did not teach a specific block parity based ECC method which may be utilized to determine and subsequently correct page/sector data errors, as such methods were considered well understood by those of ordinary skill in the art (inclusive of those more specifically utilizing a parity code derived from a mod2 sum of hamming codes/parities computed for a sequence of words such that the specific word

Art Unit: 2186

containing a correctable error may be analogously determined and correspondingly corrected as evidenced by prior art noted in patents 4,358,848 and 4,453,251), the use of any such ECC method in combination with that taught by Conley et al. is considered to be obvious to one of ordinary skill in the art at the time of the claimed invention, for the benefit of enabling the encoding, detection, and potential subsequent correction of page/sector data errors prior to being copied into said second location within a NAND flash memory device as may be desired as per claims (2-5); where further as claims (7-10, 12-13 and 15-19) are considered encompassed by claims (2-5) in other form, they are correspondingly rejected based upon the same arguments as presented above.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765. The examiner can normally be reached on Mon-Thu 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2186

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MATTHEW KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100